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OF THE MIDDLE EAR.

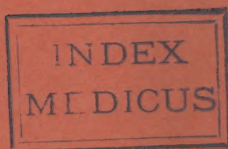
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THE INFLUENCE OF CLIMATE ON THE TREAT-
MENT OF CHRONIC CATARRH OF THE
MIDDLE EAR.

ST. PAUL, MINN.

While I cannot, from the nature of the subject, give anything in this paper that is new to the experienced aurist, I hope to elicit a discussion and by so doing obtain the views held by American aurists upon a subject of immense importance. A little more than three years ago, in a private conversation with Dr. Francis Atwood, he made the remark that cases of chronic catarrh of the middle ear improved rapidly under the influence of the Minnesota climate.

Dr. Atwood had a large practice and wide experience in treating this class of cases, extending over nine years of active work. He also had the opportunity to study the contrast in the results of treatment in a climate like that of Boston and that of Minnesota, and was deeply impressed with the far more encouraging results obtained in the latter climate.

Since that time I have been investigating the subject, and propose to give the results of the investigation in this paper.

In looking up the literature of the subject I find that but little has been written in regard to climate as a remedial agent in the treatment of this most distressing and obstinate disease. This is all the more surprising when we take into consideration the fact that nearly all the remedies known to therapeutics have been resorted to and have failed lamentably in the treatment of chronic otitis media. One remedy after another has been tried, only to be abandoned

after having been tested by the great regulator—clinical experience. The importance of climate in the treatment of diseases of a similar nature in other organs on the one hand, and the very serious nature of the disease of which we speak on the other, will suggest at once the great practical interest of our subject.

For chronic non-suppurative diseases of the middle ear do not only constitute about one-half of the cases that we are called upon to treat in private practice (Roosa), but give rise to some of the most annoying symptoms that we are ever asked to relieve; which in their worst form are a constant source of terrible annoyance, leading the unfortunate victims sometimes to seek relief by suicide or by ending their days in an insane asylum; a disease which if neglected or maltreated and allowed to progress becomes as incurable as glaucoma absolutum or atrophy of the optic nerve.

These considerations impress upon us the importance of resorting to every possible means of getting control of the malady at the earliest possible stage, and putting the patient under the most favorable surroundings to obtain relief. However widely otologists may disagree as to certain factors in the treatment of chronic otitis media, there is a perfect unanimity of opinion among them that the most important part of the local treatment is stimulation, not only of the mucous membrane of the tympanum, but that of the Eustachian tube and posterior nares.

Even the most conservative make use of mild stimulants, such as hot steam, vapor of iodine, ether or chloroform. Although they may not agree with the more heroic, who resort to vapors of turpentine, sal ammoniac and acetic acid, or the still more heroic, who make use of inter-tympanic injections of solution caustic potash, caustic soda, chloral hydrate and the various astringents. Although most of these have been discarded by the intelligent aurist of the pres-

ent day, yet the *rational* of the treatment remains the same, viz.: To stimulate the parts, tone up the relaxed tissues and blood-vessels, and encourage absorption of the exudative or inflammatory products. My own experience would indicate that these processes of repair receive valuable assistance in a cold and stimulating atmosphere in which there is a minimum amount of moisture.

Every otologist must have felt that after the membrani tympani has been forced into its proper position, and the hyperæmia of the drum cavity disposed of, the bands of adhesion broken up, or if possible divided, after the rigid and sclerosed condition of the parts has received the best possible attention, and the Eustachian tube has been made pervious to air, still there remains something to be done.

This is best accomplished, I think, by placing the patients under the most favorable climatic influence, it being the most powerful agency for the relief of this condition.

Dr. Pomeroy, in his most excellent and practical work (*Diseases of the Ear*), says: "A change of climate often relieves a hyperæmic condition of the tympanum in a few hours or days."

Politzer, probably the greatest living authority on diseases of the ear, says: "Change of air and residence in a mountainous country have a very favorable influence upon the course of chronic otitis media.

"In patients in whom the local treatment continued for months remained without results, I have observed pretty often a complete cure when they left the town and lived for several months in a mountainous region."

Certainly no higher authority could be referred to, nor stronger statement made, in regard to the efficacy of the climatic treatment of chronic otitis media. There is a wide difference of opinion among general practitioners as to which is the more favora-

ble for phthisical patients—cold or warm climate. But the best authorities seem to agree, that prior to the stage of breaking down of tissue and the formation of cavities, such cases do better in a cold climate. And just so it is with the middle ear catarrhs. The non-suppurative forms of the trouble improve, but the suppurative cases do badly.

I have many cases on my note-book to show that patients suffering with chronic otitis media improve rapidly under the influence of our Minnesota and Dakota climate, but that cases of chronic suppuration become rapidly worse or extremely obstinate, but improve when sent to a milder and warmer climate.

When we are reminded that little or no dependence can be put in therapeutic agencies, and that all forms of treatment are highly unsatisfactory, and that the experience of the best aurists has proven that much good can be accomplished by a change of situation, it seems strange that it has not been more extensively resorted to. Perhaps one reason is the slow and tedious nature of the disease, it being difficult to get the patients to realize that it is necessary for them to make a business of getting well.

But what climate shall we select for these patients? If made hap-hazard without regard to the wants of the individual cases, more harm than good is likely to result.

This introduces the subject of humidity, altitude, temperature, ozone, duration and velocity of the winds and the country over which they blow, elevation above the level of the sea, sea voyages, atmospheric pressure, etc. These are subjects which can only be hinted at here as they have not yet been studied in regard to their effect on aural troubles.

In order to show the assistance which our own climate gives in the treatment of chronic catarrh of the tympanum, I wish to analyze one hundred cases that

I have treated, fifty of which were treated in St. Paul and fifty in Altoona, Pa. The average duration of the disease in the Altoona cases, four years; but of the St. Paul cases, five years.

The treatment was the same in both places, its average time in all cases here reported was three months.

In Altoona the number of cases cured were four; improved nine; and unimproved thirty-seven.

Of the St. Paul cases, eighteen were cured; twenty improved, and twelve unimproved.

What I mean by cured, is that the acuteness of hearing comes up nearly to a normal standard, and the subjective symptoms have disappeared. So the results obtained were vastly superior in Minnesota, and so far as I have been able to ascertain this has been the same experience with other otologists who have had the opportunity to study the effect of this most excellent climate on chronic otitis media. The season of the year in which these cases do best is from the first of Sept. to the latter part of Nov., during which time there are not so many sudden changes, and there is a combination of atmospheric conditions which render the climate as pleasant and exhilarating and bracing as can be found on the globe.

The most perfect sunshine, lasting for days and months during a favorable season gives rise to a sensation of stimulation that is the delight and astonishment of every new comer.

A number of cases have come under my observation, who have been vastly improved by the climate alone. One of the chief factors in bringing about these good results is the dryness of our atmosphere. It is a fact which needs no demonstration that the amount of humidity of any locality depends largely on the source of its winds, they being the great water distributors of the earth.

Minnesota is so situated that the winds that reach her are robbed of the greater part of their moisture; this is the case both in winter and summer. The prevailing winds of fall and winter are the returning trades from the Pacific Ocean which have lost their moisture on the different mountain ranges of the far west, having come to us over half the continent (Staples.) It is well to notice also in this connection the difference between the north and east winds of Minnesota and those of the Eastern States. To the latter States these winds blow over the region of the Great Lakes, Hudson's Bay and the Atlantic Ocean; but these winds blow over a vast area of territory as large as all of the United States east of the Mississippi River before they reach Minnesota. And so with the southern winds of summer, while they have sufficient humidity to be essential to life and vegetation, they are not over-charged with moisture like the Eastern and Southern States. The absolute humidity per cubic foot at St. Paul is 0.92 grains; at Jacksonville, Fla., it is 3.81 grains, and at San Antonio, Texas, it is 3.51 grains; thus the humidity is three times greater in Florida.

Another source of benefit is the invigorating influence of the bracing tonic atmosphere that rapidly builds up the general health. Dr. Jones, of St. Paul, who has made a faithful investigation and a special study of our climate, says: "There is an increased demand for food, and an increased ability to digest it. The power of assimilation being strengthened, there results as a natural consequence, an evolution of muscular, nervous and glandular force." It can be easily understood how this, both directly and indirectly, exercises a most favorable influence upon the pathological condition of the middle ear caused by the chronic catarrh process, by stimulating the parts locally and by toning up the general health, assists in the absorption of the inflammatory

products, and in restoring the delicate mucous membrane to a healthy condition.

The following case illustrates well the powerful assistance given by climate in the treatment of chronic aural catarrh. The patient first came under my care in Altoona, Pa. He was twenty-four years of age and had been annoyed by the disease for five years. He complained of constant tinnitus, a feeling of fulness in both ears and at times pains would radiate in different directions from the ears. At regular intervals he was much annoyed by vertigo and was extremely anxious to be relieved. He was also a victim of nasal catarrh of a severe type, the mucous membrane of his nose being very irritable; when out driving it would swell up so as to completely obstruct nasal respiration. He had considerable trouble in following rapid conversation. Both ear drums had lost their transparency, and presented the usual appearance so characteristic of chronic catarrh of the middle ear. They were somewhat sunken, and the handle and short process of the malleus quite prominent. He could hear the watch only on contact; but bone conduction as tested by the tuning fork was good. This case was under treatment for about six months in Pennsylvania, with only negative results. At times it seemed as though some of the symptoms were relieved, only to return with increased severity.

Now this same case came under treatment again in St. Paul, and was submitted to the same treatment, but with far different result. The patient acknowledged marked improvement within a few days. He lost his sensation of fulness and ceased to be annoyed by the pain, and the attacks of vertigo were altogether removed. That which was still more satisfactory, was the marked improvement in the acuteness of hearing, as attested by the watch and the voice.

This case shows to a remarkable degree what can be accomplished by a change of situation and the in-

fluence of a stimulating atmosphere in the treatment of this most obstinate and extremely annoying disease.

I have a number of other cases on my note-book who have been treated in other climates without receiving benefit, but who improved rapidly under the stimulating influence of the Minnesota climate. The best results, however, were obtained with those cases that had come recently from other countries, the cases which originated in our climate being the most obstinate. Another agency that may have some influence in bringing about these favorable issues is the electrical potential. Unfortunately, no instruments have yet been devised to accurately record the relationship of this element to certain localities.

Third and St. Peter sts.



